



## **Waste to Energy: A Case Study of Eluru, A.P, India**

J. Sudhir Kumar<sup>1,\*</sup>, K. Venkata Subbaiah<sup>2</sup>, P.V.V. Prasada Rao<sup>3</sup>

<sup>1</sup>*Mechanical Eng. Dept., Sir C.R. Reddy College of Eng, Eluru-534007 West Godavari District A.P.,India;*

<sup>2</sup>*Mechanical Eng. Dept., College of Eng., Andhra University, Visakhapatnam;* <sup>3</sup>*Environment Science Dept., Andhra University, Visakhapatnam*

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**Abstract:** This paper is an attempt made to estimate the quantity solid waste that can be generated in the ELURU city, A.P, INDIA per day and to estimate the generation potentiality of energy through combustion of solid waste. The waste-to-energy industry has proven itself to be an environmentally friendly solution to the disposal of municipal solid waste and the production of energy. Waste-to-energy is now a clean, renewable, sustainable source of energy. The estimation of energy content of municipal solid waste in Eluru Municipal Corporation is discussed in this paper. The data related to number of house holds in division wise is collected from Municipal Corporation of Eluru as 39,996. Out of the 50 divisions in Eluru Municipal Corporation based on income six divisions are selected for random survey covering low, medium and high income groups. Division maps are collected from the corporation for the sample survey divisions. The divisions selected for sampling survey are re- mapped representing minimum of 10% houses selected in each division covering the total geographical location. House hold collection of solid waste is done physically in all the six divisions selected for estimating the per capita waste generation in the city. By physical weighing of all the waste collecting vehicles the total waste collected in the city is estimated and the same is compared by using the calculated per capita waste generation taking the total population of the city in to consideration to find out the quantity of waste generated in the corporation. Then a representative sample of the corporation using quartering method is collected from the dump yard. The representative sample of the city is sent for lab analysis at a MoEF recognized lab to estimate the calorific value and the same is compared by conducting several trials at the experimental setup designed with conventional approach on a Bomb calorimeter. It is estimated that by combusting the solid waste in ELURU Municipal Corporation it is possible to generate nearly 3MW of power.

**Keywords:** *Municipal Solid Waste (MSW), Municipal Corporation of Eluru (MCE), Energy, Calorific value , Garbage, Sampling, Waste to Energy (WTE), Ministry of Energy and Forest (MoEF).*

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\* Corresponding: E-Mail: [jastisudhir@yahoo.com](mailto:jastisudhir@yahoo.com), Tel: 9441059295; Fax: 0091-8812-224193